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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.               | CONFIRMATION NO.       |
|---|-------------|----------------------|-----------------------------------|------------------------|
| 09/136,483  | 08/19/1998  | SUJEET KUMAR         | 2950.25US01                       | 1810                   |
| 62274 7590 05/01/2007<br>DARDI & ASSOCIATES, PLLC<br>220 S. 6TH ST.<br>SUITE 2000, U.S. BANK PLAZA<br>MINNEAPOLIS, MN 55402 |             |                      | EXAMINER<br>MARCHESCHI, MICHAEL A |                        |
|   |             |                      | ART UNIT<br>1755                  | PAPER NUMBER           |
|   |             |                      | MAIL DATE<br>05/01/2007           | DELIVERY MODE<br>PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |  |                                     |  |
|------------------------------|--|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/136,483     | <b>Applicant(s)</b><br>KUMAR ET AL. |  |
|                              | <b>Examiner</b><br>Michael A. Marcheschi | <b>Art Unit</b><br>1755             |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 November 2006 and 21 December 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 5-8 and 11-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17 and 18 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8 and 11-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/21/06</u> . | 6) <input type="checkbox"/> Other: _____  |

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/27/06 has been entered.

Claims 1-3, 5-8 and 19-22 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Rostoker et al (U.S. Patent 5,389,194) for the same reasons set forth in the previous office action which are incorporated herein by reference.

Claims 11-16 are rejected under 35 U.S.C. 103(a) as being obvious over Rostoker et al (U.S. Patent 5,389,194) in view of Farkas et al. (730) for the same reasons set forth in the previous office action which are incorporated herein by reference.

Claims 1-3, 5-8 and 19-22 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over all the claims of copending Application No. 09/969,025 for the same reasons set forth in the previous office action which are incorporated herein by reference.

Claims 17 and 18 are allowed.

Applicant's arguments filed 11/27/06 and 12/21/06 have been fully considered but they are not persuasive.

**RESPONSE TO ARGUMENTS FOR THE 12/21/06 RESPONSE BY  
APPLICANTS:**

Applicants argument in the first paragraph of the response are directed to the declaration of Dr. Li. This declaration will be addressed below.

In the second paragraph of the response, applicants state that the Rostoker patent contains phophetic examples that add nothing to the disclosure of the reference. The examiner acknowledges the examples of this reference, however, it is clear from the examples that the claimed distribution is meet thus the examiner is unclear as how the examples do not teach the invention defined in the disclosure of the reference because these examples clearly are predictive of what is disclosed in the reference disclosure (i.e. the examples specifically teach an average particles size and a distribution which is the "P" value). Applicants continue to argue that Rostoker et al. produces the particles by the Siegel et al. patent (5,128,081) method (and this method is not capable of producing the claimed particle collection (i.e. size)). The examiner disagrees because Rostoker et al. does not state that this is the only method of making the particles, but rather uses the Siegel et al. reference as showing a known **possible** method. Rostoker et al. does limit the method to the Siegel et al. method, as argued by the applicants. Applicants would also appear to argue that the particles taught in the Rostoker et al. patent are those of the Siegel et al. patent. Applicants are apparently ignoring the teachings in Rostoker that define that the particles have the claimed distribution. With all due respect, where in the Rostoker patent is it stated that the particles therein are only produced using the method of Siegel? The examiner is unable to find any passage relating to this.

Art Unit: 1755

Applicants also state that the Singh declaration shows that the terminology cannot be properly interpreted due to internal inconsistencies. The examiner has fully addressed this declaration in the previous responses. However, the examiners arguments against this declaration are hereby redefined. The declaration under 37 CFR 1.132 by Dr. Singh is insufficient to overcome the rejection of the claims based upon the Rostoker patent. The declaration criticizes one possible method of determining Q, as defined in the reference, and there has been no showing of a preponderance of evidence that the Q value cannot be determined by the disclosed method. Since every patent is presumed valid (35 U.S.C. 282), and since that presumption includes the presumption of operability *Metropolitan Eng. Co. v. Coe*, 78 F.2d 199, 25 USPQ 216 (D.C. Cir. 1935), affidavits or declarations attacking the operability of a patent cited as a reference must rebut the presumption of operability by a preponderance of the evidence. *In re Sasse*, 629 F.2d 675, 207 USPQ 107 (CCPA 1980). Given the other teachings in the patent that Q is inversely proportional to Y, the fact the patent gives actual numerical values for Q and the teachings of the examples where the size distribution of the particles are clearly stated, the fact that the method for determining Q might be unclear to Dr. Singh and not found in the books cited by Dr. Singh does not detract from rest of the teachings of this patent nor does it show that the Q value cannot be determined by one of ordinary skill in the art. The declaration does not show that the claimed particles are different and unobvious over those of the reference and Dr. Singh's comments with respect to the Siegel patent are given no weight since he has not provided any evidence to support his conclusion and the fact the Siegel patent is not part of the rejection. Furthermore, the argument in lines 2-4 on page 5 of the declaration that he is unaware of any other methods of making the claimed particles is not supported by facts. As defined in the

Art Unit: 1755

Rostoker patent, the Q value is inversely related to the Y and that patent clearly defines the Q values. The declaration defines that the units for the Q value is not dimensionless but rather 1/cm or 1 length. The examiner is unclear as to how Dr. Singh obtained these units and the declaration does not clearly show that the Q value is not dimensionless. The number or amount of particles having a certain size would be nm or a percentage of nm and not  $1/\text{cm}^3$  (number of particles/volume of particles). The declaration continues to argue that the description (of the reference Q value) is inconsistent. Contrary to this statement, the description is clear as to how to obtain the Q values. The declaration also states that the Q value does not correspond to a Gaussian distribution. Although this may be the case, this value is the ratio of a number of particles having an average size divided by the number of particles having a size less than 50% of the average size (the value of Q is understood by the examiner and the Board or Patent Appeals and Interferences). The Q value is merely a quality factor and the fact that this value is not disclosed in any books and is not a common method does not mean that it cannot be determined by one of ordinary skill in the art in reviewing the Rostoker patent. The declaration provides no sufficient evidence to support the statements made therein. The balance of the declaration refers to references and rejections not made in this application. Finally, Dr. Singh is reminded that the patent number for the Rostoker patent relied upon is wrong. The examiner is not denying that Dr. Singh is expert in the field, the Examiner has simply rebutted his arguments and applicants have not presented any evidence showing the Examiner is incorrect in his rebuttal.

Applicants also state that Rostoker has a muddled description relating to the particle uniformity. The examiner is unclear as to this argument because, looking at the examples and

Art Unit: 1755

claim 1 of the reference, the reference clearly teaches an average particle size (X) and a distribution (P% of X), thus the description is clear

In the third paragraph of the response, applicants state that they have presented unrefuted evidence that the process of Siegel cannot make the claimed particles. This argument is based on the Siegel patent teachings, and in the above rejections, the examiner is not relying on the teachings of Siegel to reject the claims. It would appear that applicants are arguing the process, however, the claimed invention is directed to a collection of particles and not a process. In view of this, the examiner is unclear as to how argument directed to a process would provide evidence of patentability to a collection of particles especially since (1) applicants are not claiming a process and (2) the particles of Rostoker are not necessarily produced by the method of Siegel. It would appear that applicants are primarily focusing on the production method, however, the claims are not defined in terms of a method. In view of this, any arguments pertaining to the method are irrelevant and the claims are interpreted in view of the size requirements only. The fact that the examples (of Rostoker) do not say how to obtain the particles within the taught ranges does not establish that methods for making the particles are unknown because they must have been made. A reference does not require specific disclosure of what is already known to one of ordinary skill in the art. *Case v. CPC International Inc.* 221 USPQ 196, 201 (Fed. Cir. 1984). In view of this, the reference clearly enables the invention disclosed therein. Applicants also state that the process of Siegel simply does not make the claimed particles. This argument is irrelevant because the rejection is not based on the teaching of Siegel, as defined above. Applicants state they also attached a copy of a micrograph for delta alumina. The examiner acknowledges this, however, (1) the claims are not directed to delta alumina, thus how is this

Art Unit: 1755

micrograph relevant and (2) any disclosure of the micrograph is muddled, at best (micrograph is unclear).

In the forth paragraph of the response, applicants state that the declaration of Dr Kambe establishes that that no method was available for making the claimed particle collection (size). The declaration is insufficient to overcome the rejection because it amounts to an affirmation that the affiant has never seen the claimed subject matter before. This is not relevant to the issue of anticipation or nonobviousness of the claimed subject matter and provides no objective evidence thereof. See MPEP 716. Accordingly, it does not overcome the rejection.

In the last paragraph of the response, applicants state that they have presented an enormous amount of evidence to support patentability. The examiner is well aware of applicants evidence provided, however, the office also has presented clear evidence that the claimed particles are known, thus rebutting applicants evidence. This evidence being the Rostoker patent teachings and all of applicants arguments or evidence do not clearly establish why the claimed particles are patentably distinct from the Rostoker particles. Applicants appear to state that the office has not offered anything in reply to applicants unrefuted evidence. To the contrary, the evidence offered by the office is the teachings of Rostoker which clearly teaches the claimed particles and distribution. Applicants are referred to all of the previous office actions which fully address all of applicants arguments and declarations submitted. As defined above, Rostoker clearly teaches the claimed limitations, as is evident from all the previous office action and the board decision dated 2/27/03.

To comment on the declaration by Dr. Li, the crux of this declaration is that Dr. Li concluded that from all the research that the materials claimed in the instant application were not



Art Unit: 1755

publicly known at the time of filing the instant application. The examiner asks what is meant by publicly known. Does this mean in commercial use? The declaration includes a statement which amounts to an affirmation that the affiant has never seen the claimed subject matter before. This is not relevant to the issue of nonobviousness of the claimed subject matter and provides no objective evidence thereof. See MPEP § 716. The overwhelming evidence is the Rostoker patent which clearly teaches the claimed particles (size and distribution). Since the Rostoker patent was published prior to the filing date of the instant invention, it was publicly known, thus the particles themselves were known prior to the invention. The declaration, at most, establishes that the articles disclosed therein did not disclose the claimed invention. The examiner does not rebut this, but these articles were not part of the rejection and the reference applied (Rostoker) clearly teaches the claimed particles and this declaration is ineffective to overcome the teachings of the reference relied upon.

For clarification, the examiner defines the calculations of the Rostoker distribution below and these clearly establish that the reference teaches the claimed invention.

The taught alumina particles have a preferred average particle size in the range of 10-100 nm, which falls within the claimed range, and a size distribution about the average particle size in the range of 10%, 20%, or 30%. Thus the references teach all the particles fall within 10% of the average particle size and 110% of the average particle size; within 20% of the average particle size and 120% of the average particle size and within 30% of the average particle size and 130% of the average particle size. These ranges fall within the distribution defined by claims 1, 5, 6-8 and 19-22. It is clear that none of the particles in these ranges will be 3 or even 2 times of average particle size and will have a distribution that falls within the scope of that set forth in

Art Unit: 1755

instant claims 6-8 and 19-22, as show by the following calculation. Choosing an average particle size of 40, the size distributions which are 10%, 20% and 30% about the average particle size are respectively, 36-44 nm, 32-48 nm and 28-52 nm. Choosing an average particle size of 30, the size distributions which are 10%, 20% and 30% about the average particle size are respectively, 27-33 nm, 24-36 nm and 21-39 nm. Choosing an average particle size of 20, the size distributions which are 10%, 20% and 30% about the average particle size are respectively, 18-22 nm, 16-24 nm and 14-26 nm. Choosing an average particle size of 10, the size distributions which are 10%, 20% and 30% about the average particle size are respectively, 9-11 nm, 8-12 nm and 7-13 nm. Example 3 in reference teaches a polishing slurry comprising alumina particles. The taught alumina particles have an average particle size of 10 nm (X of the example) and a distribution about the average particle size of 10% (P in the example) which means that all the particles in the slurry are within the range of 10% of the average particle size and 110% of the average particle size (within the range of 9-11 nm). This range falls within size range of the instant claims and shows no particles have a size 3 or even 2 times the average particle size, which would be 30 nm or 20 nm respectively. Similar results are apparent for the distribution set forth in claims 6-8 and 19-22 and said results show that the claimed distribution is clearly defined by Rostoker.

**RESPONSE TO ARGUMENTS FOR THE 11/27/06 RESPONSE BY  
APPLICANTS:**

On pages 7-9 of the remarks, applicants argue case law relevant to the instant invention. The examiner acknowledges these citations, however, the examiner clearly established reasons

Art Unit: 1755

why the instant invention is unpatentable over the prior art (see all of the previous prosecution histories presented by the office, all of said histories being incorporated herein by reference.)

On page 8-9, it appears that applicants are arguing inoperability of the cited patent (Rostoker).

Applicants argument of inoperability is not based on facts. A reference is presumed to be operable and the burden is upon applicants to show otherwise. Applicants have not defined any clear evidence of inoperability. The reference clearly teaches (as outlined above) a collection of particles having a nm size, wherein **no** particles have a size greater than 3 times the average particle size. Applicants also state that the Examiner, the Board and the Solicitor all had separate interpretations of the reference. This is not true because the interpretations are consistent even calculations made by the board where not made by the examiner in the initial office actions (prior to examiners answer). However, said calculation was made by the examiner in response to the remand from the board, thus the interpretations are consistent with one another. The Examiner cannot find any evidence to support this assertion. If applicants maintain this argument, they need to provide evidence of this argued inconsistency. **All patents are presumed to be valid. 35 U.S.C 282. If applicants continue to argue the inoperability of Rostoker, they are requested to go through the necessary channels to show this (i.e. file a reexam).**

Applicants also make a statement that the examiner did not bother to re address any of these issues. What issues have not been re addressed? The examiner clearly incorporated the remarks in the previous office actions by reference. This clearly addresses all of the issues, contrary to applicants position.

Art Unit: 1755

Applicants' make a statement pertaining to the declaration of Dr. Singh in the paragraph on pages 9-10 of the Response in that the standard for evaluating the teachings of Rostoker is not what is possible but what a person of ordinary skill in the art would interpret the subject matter to mean. They further state that Dr. Singh is expert in the field. The examiner is not denying this (Dr. Singh is expert in the field), as applicant appear to argue. The Examiner has simply rebutted his arguments. Applicants have not presented any evidence showing the Examiner is incorrect in his rebuttal. All of the examiners previous comments on this declaration are incorporated herein by reference.

Applicants make statement that it is not the examiners role to rewrite Rostoker the make sense (i.e. examiner can not do this for his benefit). This statement is not well taken because the examiner has not done this, as alleged by applicants. The examiner has followed the "uniform application of patentability standards" defined in the MPEP.

It appears that applicants are attacking the examiner, however, they are reminded that all business must be done with decorum and courtesy.

Applicants also argue that Rostoker et al. produces the particles by the Siegel et al. patent (5,128,081) method and this method is not capable of producing the claimed particle collection (i.e. size), see paragraph bridging pages 10-11 and last paragraph on page 12. The examiner disagrees because Rostoker et al. does not state that this is the only method of making the particles, but rather uses the Siegel et al. reference as showing a known **possible** method. Rostoker et al. does limit the method to the Siegel et al. method, as argued by the applicants. Applicants would also appear to argue that the particles taught in the Rostoker et al. patent are those of the Siegel et al. patent. Applicants are apparently ignoring the teachings in Rostoker

Art Unit: 1755

that define that the particles have the claimed distribution. Applicants state that the declaration of Dr Kambe establishes that that no method was available for making the claimed particle collection (size). The declaration is insufficient to overcome the rejection because it amounts to an affirmation that the affiant has never seen the claimed subject matter before. This is not relevant to the issue of anticipation or nonobviousness of the claimed subject matter and provides no objective evidence thereof. See MPEP 716. Accordingly, it does not overcome the rejection. The fact that the examples (of Rostoker) do not say how to obtain the particles within the taught ranges does not overcome the rejection. A reference does not require specific disclosure of what is already known to one of ordinary skill in the art. *Case v. CPC International Inc.* 221 USPQ 196, 201 (Fed. Cir. 1984). There has been no showing that method of producing or forming the disclosed particle size distribution were not already known to one of ordinary skill in the art. Applicants have not presented any evidence that no other methods were known to produce the taught particles. To rebut this argument, reference is made to U.S. patent 4,842,837 which teaches a method for forming silica articles of 100 nm or less. Although this patent is directed to the manufacture of silica particles, it is the examiners position that the skilled artisan would have appreciated that it is applicable to alumina particles, as well, especially since Rostoker teaches that the particles can be silica or alumina. Notwithstanding the above patent, Rostoker teaches the claimed particles size and since the claimed particle size is clearly taught, it must have been made by a method consistent with producing said size.

Applicants also argue in paragraph bridging pages 11-12 that the prior art does not enable a person skilled in the art to make or use the invention. This is not persuasive because the art clearly shows that the claimed particles are known and since the claimed particle size is clearly

Art Unit: 1755

taught, it must have been made by a method consistent with producing said size. The inventors of the Rostoker patent are also clearly skilled artisan and thus since the claimed particle size is known, the inventors of said patent must have known how to produce the size disclosed therein. The fact that the examples (of Rostoker) do not say how to obtain the particles within the taught ranges does not establish that methods for making the particles is unknown because they must have been made. As defined above, a reference does not require specific disclosure of what is already known to one of ordinary skill in the art. *Case v. CPC International Inc.* 221 USPQ 196, 201 (Fed. Cir. 1984). In view of this, the reference clearly enables the invention disclosed therein. Finally, applicants argue that the examiner has not reviewed Dr Kambe's declaration in view of professor Singh's declaration. The examiner has done this, however, the reevaluation does no remedy the examiners position above. These declarations do not establish clear evidence of unobviousness over the reference applied. Applicants make a bold statement in that the examiner has not considered the declarations consistent with the courts ruling. Contrary to applicants position, the declarations have be evaluated consistent with the above ruling, however, as clearly defined above, the declarations are not convincing.

It would appear that applicants are primarily focusing on the production method, however, the claims are not defined in terms of a method. In view of this, any arguments pertaining to the method are irrelevant and the claims are interpreted in view of the size requirements. The Rostoker et al. clearly teaches particles composed of alumina (alpha or gamma alumina-see column 4, lines 16-19) having a size (X value of 10-100) and a distribution that is controlled to within a certain selected size (Y value which is "P" (10-50%) of "X"). See the claims. Example 3 teach that the particles have an average particle size of 10 nm (the X value) and a distribution

Art Unit: 1755

where all the particles have a size within 10% of the average particles size (the X value). This means that all the particles are within the range of 10% of the average particle size and 110% of the average particles size. Accordingly, there are **no** particles have a size greater than 3 times the average particle size. This teaching clearly reads on the claimed size because all of the size requirements are clearly disclosed by this reference. If applicants contest this, they must show clear reasons as to why the size disclosed by the reference is not the claimed size. To date, applicants have not clearly established any differences.

With respect to the combination rejection ((U.S. Patent 5,389,194) in view of Farkas et al. (730)), applicants arguments do not address the examiners reasons for combining.

With respect to the ODP (obvious double patenting rejection) based on 09/969,025, applicants argue that an ODP rejection is not proper for applications filed after June 8, 1995. This is not persuasive because the MPEP section applicants refer to clearly states that a ODP can be made in application filed after June 8, 1995

To further comment on applicants criticism of the Q value defined in Rostoker, it is well established that a reference can be used for all it realistically teaches and since examples 1 and 3 and the claims of the reference do not refer to any Q value, no Q value is needed to understand the claims and the examples and it is these that teach a distribution that clearly reads on the instant claims.

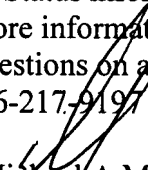
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1755

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

4/07  
MM

  
Michael A Marcheschi  
Primary Examiner  
Art Unit 1755